

LETTER OF TRANSMITTAL

To: The Artec Group, Inc.
P.O. Box 50335
Sarasota, FL 34232-0302

DATE: 2/16/2016
JOB NO: 153823
REFERENCE: St. Pete-Cltw Airport
DESCRIPTION:

ATTN: Dan Heim, Project Manager

SENT TO YOU VIA: Mail Blueprinter Overnight Delivery (Carrier) _____
 E-Mail Your Pick-Up Messenger Other Courier _____
Michael Baker

No. of Copies	No. of Originals	DESCRIPTION
1		15310 Fire Protection – NOVEC System Equipment Package, Consolidated Report & Flow Calculations

SENT FOR YOUR: Approval Review Comments Per Your Request
 Files Signature Use Information _____

REMARKS:
Reference MBI comments referring to the new location of the panel and the tank.

BY: 
William "Chip" Hayward, Jr. AIA, CSI-CCCA
Senior Associate/Architect
Michael Baker International

COPIES TO: Scott Yarley w/1 set (enclosed)
Michael Cummings w/1 set (enclosed)
Angela Dunkel w/ digital copy
Sharepoint w/ enclosed
File

Advanced Systems Engineering, Inc.

13555 Automobile Boulevard, Suite 330, Clearwater, FL 33762
 Office: 727.540.9396 • Facsimile: 727.540.9376



Mechanical • Electrical • Plumbing • Fire Protection

RE-SUBMITTAL & SHOP DRAWINGS COMMENT SHEET - FIRE PROTECTION

Project: St. Pete Clearwater International Airport - Gates 7-10 Terminal Addition	Date: 2/15/2017
Reviewed by: Vince Kovach	Project # 14010.01
Contractor: The Artec Group, Inc.	
Comments	Action Code
Novec Fire Suppression System	
1 Shop Drawing.	A
2 Equipment submittal.	A
<p>Action code:</p> <p>A – Approval is based on the understanding this product(s) meets all requirements and capacities of what is specified. Failure to do so will be corrected at this contractor's expense. All equipment requirements must be coordinated with other trades and any cost impact will be at this contractor's expense. Coordinate all electrical requirements with the electrical contractor prior to ordering any equipment.</p> <p>B - Make corrections noted - do not resubmit. This is based on the understanding that these products meet all requirements and capacities specified. Failure to do so will be corrected at the mechanical contractor's expense. All electrical and other equipment requirements must be coordinated with electrical and other trades and any costs associated with these items whether indicated on the plans or not will be the responsibility of this contractor. Verify field conditions prior to ordering equipment.</p> <p>C - Rejected, REVISE, and Resubmit.</p> <p>D - Rejected, Submit Specified items.</p> <p>E - Make corrections noted – Resubmit specified items.</p> <p>F - No action taken.</p> <p>G - Not found in the submittal package. Contractor shall submit.</p>	

- | | |
|----------------------------------------------|------------------------------------------------|
| <input checked="" type="checkbox"/> Reviewed | <input type="checkbox"/> Furnish as Corrected |
| <input type="checkbox"/> Rejected | <input type="checkbox"/> Revise and Resubmit |
| <input type="checkbox"/> No Exceptions Taken | <input type="checkbox"/> Submit Specified Item |

This review is only for general conformance with the design concept and the information given in the Construction Documents. Corrections or comments made on the shop drawings during this review do not relieve the contractor from compliance with the requirements of the plans and specifications. The Contractor is responsible for: dimensions to be confirmed and correlated at the jobsite; quantities; fabrication processes; coordination of the work with that of all other trades and performing all work in a safe and satisfactory manner.

Advanced Systems Engineering, Inc.
 Date: 02.15.2017
 By: Vince Kovach



The Artec Group, Inc.
 376 Interstate Court
 Sarasota, FL 34240
 Phone (941) 960-1378
 Fax (350) 421-0490

Letter of Transmittal

To:	Chip Hayward – Michael Baker Inc.
From:	Daniel Heim – The Artec Group
Date:	2/16/17
Job Reference #	PIE – St. Pete Clearwater International Airport Terminal Improvements

We are sending you the following:

- | | | |
|----------------------------------------------|--------------------------------|----------------------|
| <input checked="" type="checkbox"/> Attached | Under Separate Cover Via _____ | the following items: |
| Shop Drawings | Prints | Plans |
| Specifications | Copy of Letter | Change Order |
| | | Samples |
| | | Other _____ |

Copies	Date	Number	Description
	2/16/17		Submittals
1			NOVEC system equipment package
1			Consolidated report & flow calculations

These are transmitted as checked below:

- | | | |
|------------------------------------------------------------|--------------------------|--------------------------------------|
| <input checked="" type="checkbox"/> For Approval | Approved as Submitted | Resubmit _____ copies for Approval |
| For your Use | Approved as Noted | Submit _____ copies for distribution |
| As requested | Returned for corrections | Return _____ corrected prints |
| <input checked="" type="checkbox"/> For review and comment | | Other _____ |
| For Bids due _____ 200__ | | Prints returned after loaned to us |

Remarks:

Artec has reviewed these submittals for design conformity and general conformance to contract documents.

Copy to: _____ Signed: Daniel Heim _____

- Select item
 Review item



420 Manor Drive
Merritt Island, Florida 32952
Ph: 321-783-1040 Fax: 321-783-1516
FLORIDA LICENSE NO. FPC15-000097

**NOVEC System
Equipment Submittal**

For

**St.Pete- Clearwater International
Gates 7-10 Addition
Room #114 Data/ IT
Clearwater, Florida**

Note: The following Equipment Material Submittals may be substituted in field by another manufacture as long as devices are equal.

Kidde Engineered Fire Suppression System

Designed for use with 3M™ Novec™ 1230 Fire Protection Fluid

Cylinder and Valve Assemblies, 125 lb. Capacity Cylinder Data Sheet



Effective: June 2015

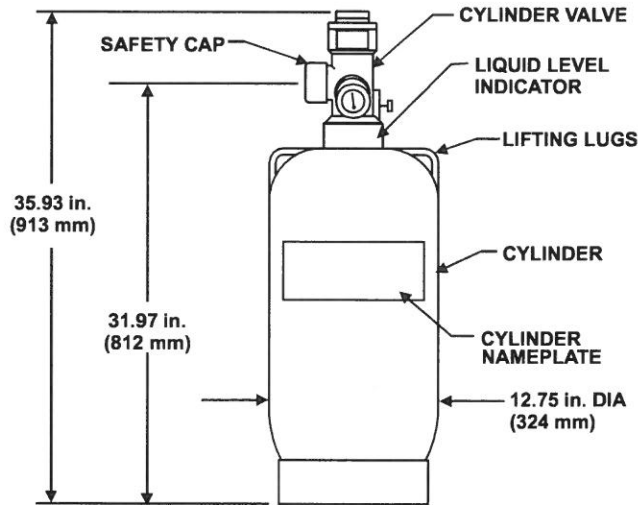
K-45-2030 Rev AD

FEATURES

- *UL Listed, ULC Listed, and FM Approved for use with Novec 1230 Systems*

P/N: 45-10012X0-001

ORDERING INFORMATION



Part Number	Description
45-100121-001	with LLI
45-100125-001	STD

MATERIALS

- Valve Body: Brass
- Cylinder: Steel, Painted Red

Note:

1. The safety cap must be installed on the valve outlet at all times, except when the cylinders are connected to the system piping, or being filled. The safety cap must not be removed from its chain.
2. See K-45-2020 for additional information.

Kidde is a registered trademark of Kidde-Fenwal, Inc.
3M and Novec are trademarks of 3M.
All other trademarks are property of their respective owners.

This literature is provided for informational purposes only. KIDDE-FENWAL, INC. assumes no responsibility for the product's suitability for a particular application. The product must be properly applied to work correctly. If you need more information on this product, or if you have a particular problem or question, contact KIDDE-FENWAL, Inc.

AEGIS™

Conventional Fire Alarm-Suppression Control Unit



Effective: November 2007

K-84-100

FEATURES

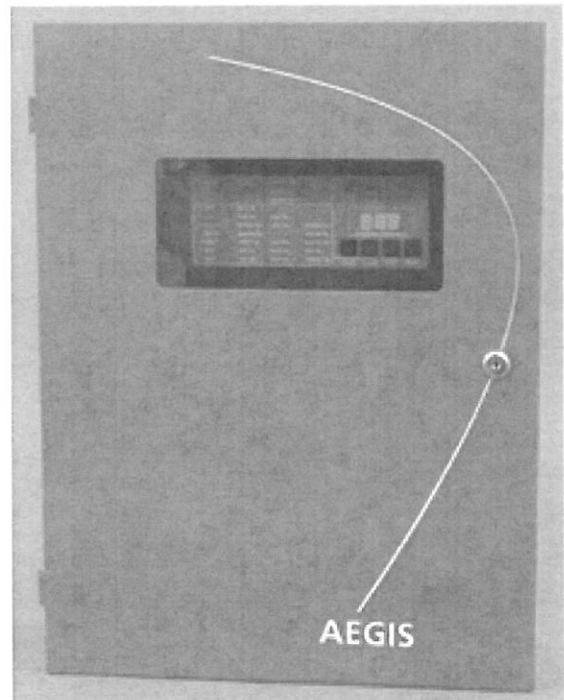
- **Agency Approvals**
 - *cFMus Approved to NFPA 72, ANSI 864, 9th edition and ULC-S527-99*
 - *CSFM Approved*
 - *MEA Approved*
 - *cULus Listed to ANSI 864, 9th edition and ULC-S527-99*
- **Suppression focused Control Unit**
- **Listed for a Wide Range of Suppression Systems**
 - *Kidde FM-200®, FE13™, CO₂, 3M™ Novec 1230™ Fire Protection Fluid, Argonite™, and Halon Clean Agents*
 - *Kidde IND™ Dry Chemical & WHDR™ Wet Chemical Systems*
 - *Sprinkler Supervisory Service*
 - *Deluge, Preaction, Foam, Foam-Water Systems*
- **Combination Clean Agent plus Pre-Action System**
- **Built-in Class-A and Class-B Circuitry**
- **Sophisticated Programmable Notification Appliance Circuits**
- **Independently Programmable Agent Releasing Circuits with Triple-R Protection**
- **Input and Output**
 - *3 Detection Circuits*
 - *2 Supervisory Circuits*
 - *1 Manual Release Circuit*
 - *1 Abort Input Circuit*
 - *3 Notification Appliance Circuits*
 - *2 Release Circuits*
 - *4 Form-C Relays*
- **Programmable Relays**
- **Robust Power Supply**
- **Elegant User-Interface**
- **Simple Configuration**
- **Password Protected**
- **Digital Release Countdown**
- **Battery Voltage and Charging Current Display**
- **Extensive Diagnostics**
- **Backwards Compatible**
- **Improved and Enlarged Cabinet Design**
- **5-Year Warranty**

DESCRIPTION

The Kidde AEGIS is the technologically most advanced Conventional Single Hazard Agent Releasing Unit available to the Fire-Alarm Suppression industry today. It combines the high quality, system reliability, and flexibility required by modern commercial, high-tech and industrial applications in an aesthetically pleasing and physically robust package.

The AEGIS is well equipped to handle all special hazard extinguishing systems due to the high degree of programming flexibility provided and the following full complement of input and output circuits:

- **Three (3) Class A or Class B Detection Circuits**
- **Two (2) Class A or Class B Supervisory Circuits**
- **One (1) Class A or Class B Manual Release Circuit**
- **One (1) Class A or Class B Abort Input Circuit**
- **Three (3) Class A or Class B Notification Appliance Circuits**
- **Two (2) Class B Agent Release Circuits**
- **Four (4) Form-C Relays**



DETECTION CIRCUITS

The Detection Circuits can support up to 25 Conventional CPD-705x Ionization Smoke, PSD-715x Photoelectric Smoke, or THD-705x Heat Detectors each as well as Normally Open contact closure type devices. Two circuits are dedicated to the main suppression function and can be programmed to activate the release circuits by either single-shot or cross-zone input. The user-configuration allows automatic release via detection to be delayed from 0 to 60 seconds in 10-second intervals and also allows a choice of which of the two Agent Release Circuits to activate.

The third Detection Circuit is programmable for either Waterflow or as an independent Detection circuit. When programmed for Waterflow, Notification Appliance Circuits can be programmed as Non-Silenceable as required by certain jurisdictions.

SUPERVISORY CIRCUITS

The Supervisory Circuits accept Normally Open contact closure type devices such as pressure switches on the agent cylinders or on the water or air pipe network. The system configuration enables the supervisory input to be a participant in the suppression function. For example, low air supervisory can be included with detection for release of pre-action systems as required by certain jurisdictions.

MANUAL RELEASE AND ABORT CIRCUITS

Both the Manual Release and Abort Circuits accept Normally Open contact closure type devices. Activation of the Agent Release Circuits can either be instantaneous or delayed up to 30 seconds (maximum) upon receipt of Manual Release input. Agent release can be temporarily delayed by activating the Abort Circuit. The Abort input can be programmed for 5 modes of operation. These include the UL 10-second mode, the full-delay mode, the IRI mode, the NYC mode, or the abort can be disabled. Aborts can also be programmed to be applicable for either one or both Agent Release Circuits thereby allowing use with Deluge/Pre-Action systems.

NOTIFICATION APPLIANCE CIRCUITS (NAC)

The three Notification Appliance Circuits are rated 1.5 Amps each and accept polarized 24 Vdc Notification Appliances. Each circuit is driven independently and is user configurable for First Alarm, Pre-Release, and Releasing as well as for 60 BPM, 120 BPM, Temporal, or Continuous pattern.

The MT and NS series appliances provide the option to use silenceable horns and non-silenceable strobes on the same NAC. Multiple NAC circuits (connected to audible devices only) programmed with the same master code pattern are synchronized, regardless of any differing starting times that preceded their concurrent operation. The NACs configuration includes a user-selectable intelligent synchronization feature which allows a silenceable horn to be shut off while the strobe continues to flash in synchronized fashion.

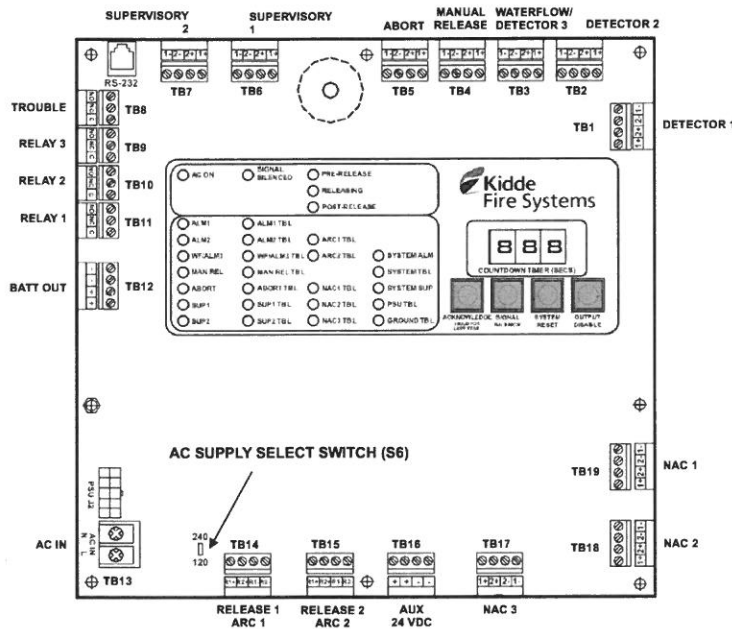


Figure 1. Printed Circuit Board (PCB)

BUILT-IN CLASS A AND B CIRCUITRY

For the input and NAC circuits, the choice of Class A or Class B supervision is made at site on the board itself by selecting the terminals used for wiring. Neither conversion boards nor additional hardware nor jumper selection is required for this purpose.

AGENT RELEASE CIRCUITS (ARC)

The two circuits can be programmed for activation by different inputs, with independent time delays and abort modes to fire combinations of two of the following releasing devices:

- 1 or 2 Kidde Continuous and Momentary Solenoid Control Heads
- 1 Kidde Initiator
- 1 Factory Mutual Group A, B, D, E, F, G, I, J, or K Solenoid

In other words, operating in tandem, the two circuits can release:

- 1 or 2 Control Heads on ARC1 and 1 or 2 Control Heads on ARC2
- 1 or 2 Control Heads on ARC1 and 1 Initiator on ARC2 or vice-versa
- 1 or 2 Control Heads on ARC1 and 1 FM Sprinkler Solenoid on ARC2 or vice-versa
- 1 Initiator on ARC1 and 1 Initiator on ARC2
- 1 FM Solenoid on ARC1 and 1 FM Solenoid on ARC2

This configurability is useful for those jurisdictions where the gaseous suppression agent is required to be supplemented with a pre-action system.

TRIPLE-R PROTECTION FOR AGENT RELEASING CIRCUITS (ARC)

The two ARCs feature a triple failure redundancy safeguard system to protect them from inadvertent activation by the main microprocessor. The Triple-R system requires that in order to activate an ARC, the main microprocessor issues two release commands of opposing polarity via separate channels and that these commands be combined with a third signal from the panel watchdog timer to confirm the microprocessor operation. The Triple-R system ensures that electrical transients or disturbances such as power surges that could interfere with the operation of the main microprocessor will not inadvertently activate the connected suppression system. The result is a more robust and reliable suppression-focused panel.

PROGRAMMABLE RELAYS

Of the 4 relays, three are user-programmable for a variety of alarm related conditions and the fourth is a dedicated trouble relay. All relay contacts are rated 3.0 Amps at 30 Vdc/120 Vac (resistive).

POWER-LIMITED CIRCUITRY

All circuits, excluding ARCs are inherently power-limited. Agent Release Circuits, except when firing Initiators, can also be made power-limited by a field located inline releasing diode device thereby allowing cost effective installation with all wiring in the same conduit.

ROBUST POWER SUPPLY UNIT (PSU)

The AEGIS features a universal 120/240 V, 50/60 Hz AC Power Supply Unit with a robust 5.4 Amps of 24 Vdc power. Input voltage selection is via a slider switch with no jumper cutting required. The on-board battery charger is able to charge 24 Vdc (2 x 12) batteries of capacity up to 68 Ah thereby allowing from 24 hours of supervision plus 5 minutes of alarm to 90 hours of supervision plus 10 minutes of alarm required by some jurisdictions.

AUXILIARY POWER SUPPLY

Up to 1 Amp of auxiliary power at 24 Vdc is available to power external 4-wire devices such as Flame Detectors, AlarmLine modules, Duct Detectors, etc.

ELEGANT USER-INTERFACE

The user-interface consists of an array of LED Indicators, Control Switches, a Digital Display, and Buzzer. Over and above the System, Power Supply status, Input circuit Fire and Trouble and Output circuit Trouble LEDs, the AEGIS annunciates its suppression state-of-alarm via three additional Pre-Release, Releasing and Post Release LEDs. Four switches are provided, one each for Acknowledge, Signal Silence, System Reset and Output Disable. The 3-digit display provides a countdown of impending agent release. On command from the user-interface switches, it also indicates the battery open circuit voltage and charging current.

SIMPLE SITE-SPECIFIC CONFIGURATION

Accessed via the digital display and user-interface switches, site-specific configuration is simple, yet detailed and can typically be performed in a matter of minutes. To prevent unauthorized use, the configuration menu is protected by a user-changeable password. Factory technical support can provide assistance with lost or forgotten passwords.

Apart from the input voltage selection performed on both the PSU and main board via a slider switch, no other on-board settings or jumper cuttings are required.

EXTENSIVE DIAGNOSTICS

Also initiated via the digital display and user-interface switches, the troubleshooting function displays diagnostic codes that assist in determining causes of trouble. A complete list of diagnostic codes and their meaning ships factory installed on the inside of the enclosure door for easy reference.

BACKWARDS COMPATIBILITY

Consistent with previous generation Kidde control equipment, the AEGIS is listed to be backwards compatible with the full range of Kidde-Fenwal conventional detectors, alarm devices and suppression accessories. Going forward, this will allow older generation panels to be replaced with relative ease.

IMPROVED AND ENLARGED CABINET DESIGN

The cabinet design allows for easy installation by fitting between the studs of a standard 16 inch studded wall. It is large enough to house two 12 Vdc, 12 Ah Batteries and provides up to 2 inches (51 mm) of wiring and finger space between the circuit board and the cabinet wall.

An optional door design features a Manual Release and Abort switch for applications with space constraints. Both switches incorporate guards that prevent their inadvertent activation.

Other cabinet options include a flush mounting trim-ring and a dead-front plate required for Canadian applications.

TECHNICAL SPECIFICATIONS

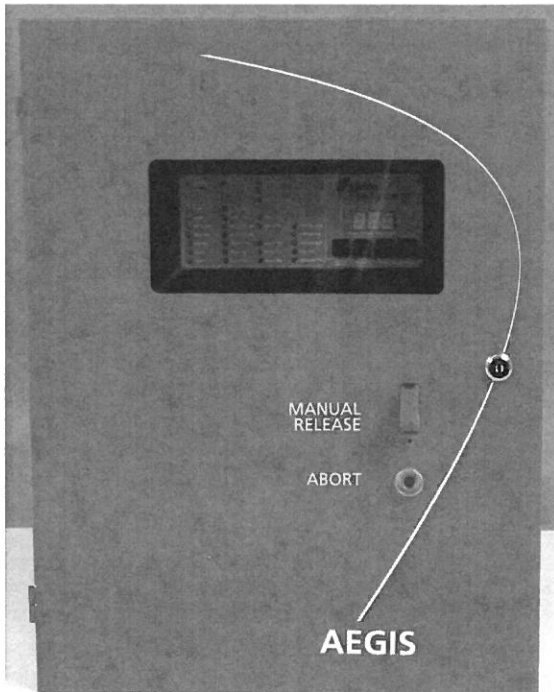
- Hazards Protected
 - One
- Power Supply
 - 120/240 Vac, 50/60 Hz (90 to 264 Vrms, 47 to 63 Hz) AC Main Input
 - 5.4 Amps at 27 Vdc Output
 - Battery capacity up to 68 Ah @ 24 Vdc
 - Auxiliary power output rated at 1 Amp at 18.8 - 27.6 Vdc (resettable)
- Three (3) Detection Circuits
 - Compatible with up to 25 CPD-705x, PSD-715x, and THD-705x detectors and normally open contact-closure type devices
 - Configurable as Class A/Style D or Class B/Style B
 - Supervised for ground faults and open circuits
 - Power limited
 - DET 1 and DET 2 used for suppression
 - DET3/WF configurable for detection or waterflow
- One (1) Manual Release Circuit
 - Compatible with normally open contact-closure type devices
 - Configurable as Class A/Style D or Class B/Style B
 - Supervised for ground faults and open circuits
 - Power limited

TECHNICAL SPECIFICATIONS (cont'd)

- One (1) Abort Circuit
 - Compatible with normally open contact-closure type devices
 - Configurable as Class A/Style D or Class B/Style B
 - Supervised for ground faults and open circuits
 - Power-limited
- Two (2) Supervisory Circuits
 - Compatible with normally open contact-closure type devices
 - Configurable as Class A/Style D or Class B/Style B
 - Supervised for ground faults and open circuits
 - Power-limited
- Three (3) Notification Appliance Circuits (NACs)
 - Compatible with polarized 24 VDC Audio-Visual devices
 - Rated at 1.5 Amps each
 - Configurable as Class A/Style Z or Class B/Style Y
 - Supervised for ground faults, shorts, and open circuits
 - Power-limited
 - Common NAC/ARC output disconnect switch
- Two (2) Agent Release Circuits
 - Each compatible with 1 or 2 control heads, or 1 initiator, or 1 FM sprinkler solenoid
 - Circuits electrically capable of simultaneously releasing any combination of two of the above devices
 - Factory configured as Class B/Style Y
 - Supervised for ground faults and open circuits
 - Non-power-limited. May be power-limited (except with initiators) and supervised for short circuit using inline releasing resistor-diode device
 - Common NAC/ARC output disconnect switch
- Four (4) Relays
 - 3 independently programmable, normally de-energized Form-C
 - 1 dedicated normally energized Form-C Trouble Relay
 - Relay contacts rated 3 Amps at 30 Vdc/120 Vac (resistive)

TECHNICAL SPECIFICATIONS (cont'd)

- Enclosure
 - NEMA 1 rated 18 gauge sheet steel with door
 - Red color
 - Suitable for wall and surface mounting
 - Optional Trim Ring
 - Optional Dead-Front Panel
 - Optional door with Manual Release and Abort switches
 - Dimensions:
 - **with Standard Door:**
14-1/4 in. W x 5 in. D x 19 in. H
(362 mm x 127 mm x 483 mm)
 - **with Switch Door:**
14-1/4 in. W x 6 in. D x 19 in. H
(362 mm x 152 mm x 483 mm)
- Environmental Criteria
 - Indoor/Dry use only
 - Operating temperature range: 32°F to 120°F
(0°C to 49°C)
 - Humidity: 93 ± 2% RH at 90 ± 3°F (32 ± 2°C)
- Packaging/Shipping
 - Enclosure, PCB, and PSU packaged in individual cartons
 - Accessories shipped include mounting hardware, battery leads, IOM manual on CD-ROM, operating instruction sheet, and EOL resistor kit
 - Order inline releasing resistor-diode device (if required) and batteries separately



ORDERING INFORMATION

Description	Part Number
Kidde AEGIS Control Panel	84-732001-001
Kidde AEGIS Control Unit with Switches	84-732001-201
In-Line Releasing Diode (10K) Kit	06-220023-001
Trim Ring	76-600000-007
Dead-Front Panel*	06-220175-001
Battery Enclosure	76-100010-001
Kidde AEGIS Conventional Fire Alarm-Suppression Control Unit IOM Manual	06-236716-001
Kidde AEGIS User's CD	06-236727-001
Installation/Configuration Kit	06-220148-002
Operating Instructions	06-236719-002
Replacement Hardware Installation Kit	06-220149-001
Replacement Enclosure Assembly	06-220172-002
Replacement Enclosure Assembly (with Switches)	06-220174-002
Replacement Switch Kit	06-220176-001
Replacement PCB Assembly	06-220150-001
Replacement Power Supply	06-118394-002
Replacement Bezel Assembly	06-220151-001
Spare Key	06-118013-001
Spare Keylock with Keys	06-129924-001
EOL Backbox (Canadian applications only)	06-129963-002
Battery Harness	06-129925-002
*For Canadian applications, order Control Unit and Dead-Front Panel separately.	

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AEGIS and Gemini are trademarks of Kidde-Fenwal, Inc.
FM-200 is a registered trademark of Chemtura.
FE-13 is a registered trademark of DuPont.
3M™ Novec™ 1230 Fire Protection Fluid is a trademark of 3M.
Argonite™ is a registered trademark of Ginge Kerr.

For detailed installation, operation, and configuration information, refer to the Kidde AEGIS Conventional Fire Alarm-Suppression Conventional Unit Installation, Operation, and Maintenance Manual P/N 06-236716-001.

This literature is provided for informational purposes only. KIDDE-FENWAL, INC. assumes no responsibility for the product's suitability for a particular application. The product must be properly applied to work correctly. If you need more information on this product, or if you have a particular problem or question, contact KIDDE-FENWAL, INC., Ashland, MA 01721. Telephone: (508) 881-2000.



Kidde Fire Systems

A UTC Fire & Security Company

400 Main Street
Ashland, MA 01721
Ph: 508.881.2000
Fax: 508.881.8920
www.kiddefiresystems.com

Model 878752 Suppression System Abort Station

FEATURES

- UL Listed, File # S3743
- Flush or Surface Mount
- One Normally Open Contact
- Sized for Double Gang Box
- Large Yellow Push Button Switch

DESCRIPTION

The Kidde Model 878752 Abort Station features a large, easy-to-operate abort push button. The momentary type switch is very easy to see due to its highly visible yellow color. The abort station stainless steel faceplate is clearly labelled with operation procedures—eliminating indecision and hesitation.

The Backbox is painted with red enamel and is provided with four 1/2-inch knockouts. The pre-drilled and tapped mounting tabs allow for easy attachment of the abort station.

TECHNICAL SPECIFICATIONS

Electrical Ratings:

One normally open momentary contact rated 2.5 Amps @ 120 Vdc

Ambient Temperature:

-13°F to 158°F (-25°C to 70°C)

Terminals:

Captive screws and saddle clamps accept 14 AWG to 24 AWG wire

Mounting:

Four 6-32 x 1/2-inch mounting screws included



ORDERING INFORMATION

Part Number	Description	Shipping Weight
84-878752-010	Abort Station	2 lb. (.9 kg)
84-878752-020	Abort Station with Backbox	3 lb. (1.4 kg)
84-296105-000	Backbox	1 lb. (.45 kg)

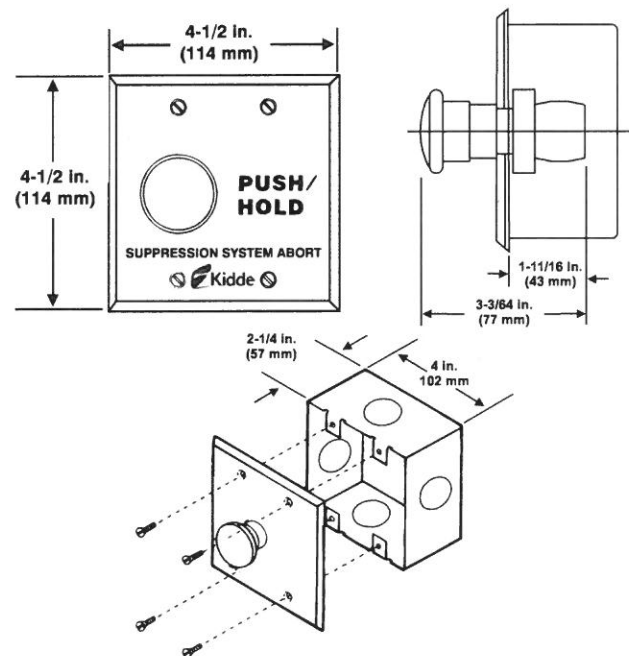


Figure 1. Dimension Details

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Kidde Fire Systems
A UTC Fire & Security Company
400 Main Street
Ashland, MA 01721
Ph: 508.881.2000
Fax: 508.881.8920
www.kiddefiresystems.com

Manual Pull Stations

Series 3300

FEATURES

- **Exclusive KIDDE® Design**
- **Unique Field Labeling for either Fire Alarm or Suppression Applications**
- **Dual Action Operation**
- **Single Pole or Double Pole**
- **Keylock for Reset**
- **FM Approved**
- **cULus Listed for US and Canada**
- **Other domestic approvals in process**
- **Surface and Weatherproof Backboxes**
- **Backwards compatible mounting with the B-10 and B-11**

DESCRIPTION

The Kidde® Conventional SPST and DPST Series 3300 Manual Pull Stations are high quality, non-coded alarm initiating devices. The Manual Pull Stations are constructed of heavy die-cast aluminum for long life and use an internal toggle switch for reliable operation.

The SPST Manual Pull Station provides an Single Pole, Single Throw switch with screw terminal connections for wiring to the Fire Alarm/Suppression Control Unit.

The DPST Manual Pull Station provides a Dual Pole, Single Throw switch with screw terminal connections. One set of contacts must be wired to the Fire Alarm/Suppression Control Unit and the other may be used for local or remote annunciation.

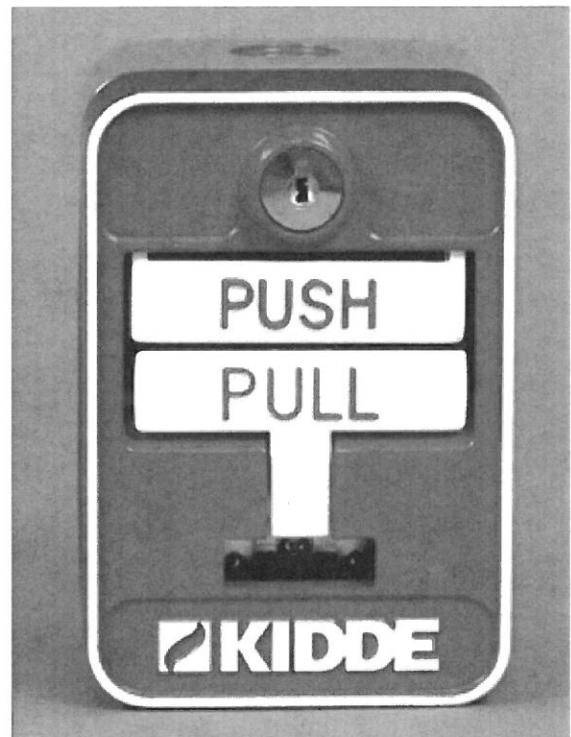
These Manual Pull Stations are designed for quick, efficient response by personnel in an emergency, while the double action PUSH/PULL levers prevent accidental operation. This unit should use a break rod as an indicator of operation.

The Manual Pull Stations can be mounted in an indoor or outdoor weatherproof backbox (Model SBG-32S or Model SGB-32C) or a North American 2-1/2 in. (64 mm) deep 1-gang box. The Manual Pull Station terminal block accepts 14, 16 and 18 AWG wire.

FIRE ALARM OR SUPPRESSION RELEASE LABELING

The Kidde Series 3300 Manual Pull Stations have a unique labeling method which provides the installer the greatest amount of flexibility. Seven labels are shipped with each station:

- **FIRE ALARM**
- **CO₂ RELEASE**
- **FIRE SYSTEMS RELEASE**
- **NOVEC 1230 RELEASE**
- **FM-200 RELEASE**
- **FE-13 RELEASE**
- **HALON-1301 RELEASE**



These permanent, heavy-duty Lexan® self-adhesive labels are die-cut with raised lettering. During installation, the installer simply chooses the appropriate label, removes the protective backing, and places the label into the space on the top of the station. This flexibility allows installations to be customized for each customer, without the expense of having to carry extra inventory.

OPERATION

The dual action Series 3300 manual stations are operated by simply pushing the PUSH bar inwards, allowing the PULL handle to be grasped in a one-handed motion. The handle is then pulled down as far as it will go. If the optional breakrod is installed, it would break at this point. The handle is now locked in place, and is easily visible from up to 50 feet away. The handle is reset by opening the station with the key and placing the handle in the normal upright position. Place the switch actuator in the

down position, insert breakrod into cavity beneath handle (if applicable), and re-lock the station.

ORDERING INFORMATION

SPECIFICATIONS

Station Type: Double Action, Non-coded
 Switch Type: P/N 84-330001-001: SPST
 P/N 84-330001-002: DPST
 Switch rating: 2 Amp @ 240 Vac or 125 Vdc
 Operating Temperature Range: -40°F to 150°F (-40°C to 66°C)
 Operating Humidity Range: 0-95% RH
 Construction: Die-cast metal housing
 Compatible Electrical Boxes: Indoor: Sheet metal Model SGB-32S
 Outdoor: Weatherproof Die-cast Model SGB-32C
 Shipping Weight: 1.12 lbs. (510 g)

Part Number	Description
84-330001-001	Double Action Manual Pull Station with SPST Switch — ships with mounting hardware, 2 keys, 1 break rod, and label set.
84-330001-002	Double Action Manual Pull Station with DPST Switch — ships with mounting hardware, 2 keys, 1 break rod, and label set.
84-100009-001	SGB-32S Indoor Backbox
84-100009-002	SGB-32C Outdoor Waterproof Backbox
84-100008-002	Pkg. of (12) Breakrods
06-118013-001	Spare Key
06-231866-930	Label Set

SGB-32S INTERIOR SURFACE BACKBOX

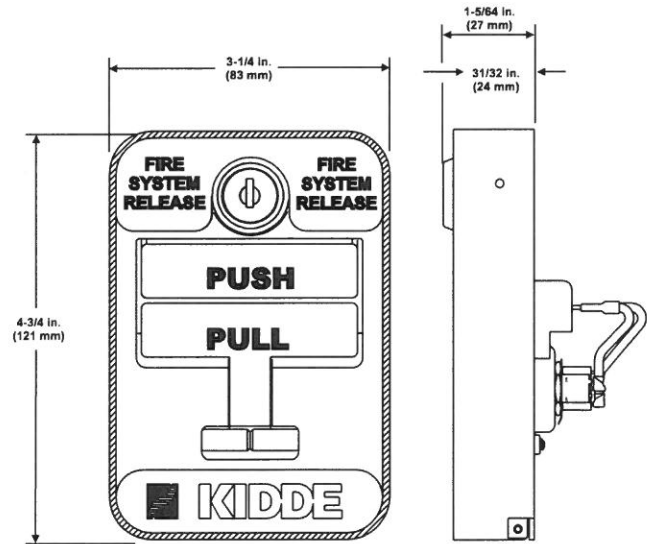
Dimensions: 4.75 in. H x 3.25 in. W x 2.25 in. D
 Construction: Steel sheet metal.
 Conduit: Two knockouts for 1/2 in. conduit connectors, one on top and bottom.
 Mounting: Mounts to the box with (4) 8/32 screws, which ship with each box.

SGB-32C WEATHERPROOF SURFACE BACKBOX

Dimensions: 4.75 in. H x 3.25 in. W x 2.25 in. D
 Construction: Cast aluminum.
 Conduit: One threaded opening for 1/2 in. conduit connector.
 Mounting: Mounts to the box with (4) 8/32 screws and a foam gasket, which ship with each box.

DIMENSIONS

(shown with Fire System Release Label installed)



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 FM-200 is a registered trademark of the Great Lakes Chemical Corporation.
 3M and Novac are trademarks of 3M.
 FE-13 is a trademark of DuPont.
 Lexan is a registered trademark of the General Electric Company.

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A UTC Fire & Security Company

400 Main Street
 Ashland, MA 01721
 Ph: 508.881.2000
 Fax: 508.881.8920
www.kiddefiresystems.com

Advanced Photoelectric Smoke Detectors

Models PSD-7157 and PSD-7157D

Effective: January 2010
K-70-02

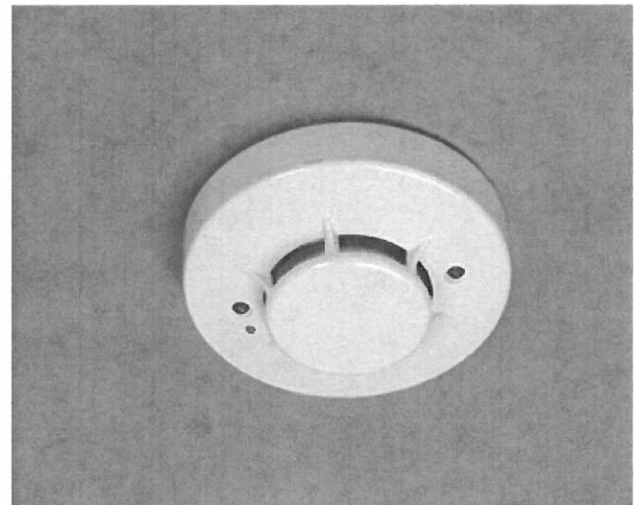
FEATURES

- **Approvals/Listing**
 - US and Canadian UL Listed (cULus)
 - FM Approved
 - CSFM Approved
 - NYC MEA Accepted
- **Nominal Sensitivity**
 - PSD-7157: 3.25% per ft. Obscuration
 - PSD-7157D: 2.40% per ft. Obscuration
- **Sensitivity Measurement/Testing**
 - Wireless Measurement in %/ft. Obscuration
 - Remote and Local Functional Test Capability
- **Wide Range of Input Voltage 10.2 to 36.8 Vdc**
- **Low Current Design**
- **Dual Response LEDs Allow 360-degree Viewing**
- **Trouble Indication**
- **Low Profile Appearance Using Surface Mount Technology**
- **Electrically and Mechanically Compatible with all Fenwal Smoke and Electronic Heat Detectors and Bases**
- **Interchangeable 2-Wire and 4-Wire Bases**
- **Universal Relay Modules**
- **Non Polarized**
- **Locking Feature for Vandal Resistance**
- **Fine Mesh Insect Screen**
- **EMI and RFI Resistant**

DESCRIPTION

The Models PSD-7157 and PSD-7157D Photoelectric Smoke Detectors respond to a broad spectrum of both flaming and smoldering fire conditions. The Detectors have advanced solid-state, low-voltage, surface-mount circuitry and are designed for 2-Wire and 4-Wire installation using the appropriate Detector base. The characteristic 360-degree detector design permits smoke entry from any direction. A unique sensing chamber design permits the operation of the Models PSD-7157 and PSD-7157D in open areas with air velocities from 0 to 300 fpm and 0 to 4000 fpm respectively. The Model PSD-7157D is also suitable for duct housing applications in air velocities from 500 to 4000 fpm. The Detectors are designed for open area/duct housing applications per UL268/UL268A and may be installed in systems intended for Releasing Device Service through use of compatible Fire Alarm Control Panels.

Two Red Light Emitting Diodes are located diametrically opposite each other so as to allow 360-degree viewing. Both LEDs continuously indicate the operating condition of the Detector. During standby, the LEDs flash once every six seconds. During alarm, both LEDs light steady at full brilliance. A double flash every six seconds indicates a detector with a sensitivity threshold outside acceptable limits. A unique gated output circuit design provides improved stability and transient suppression. Special signal processing techniques verify the presence of smoke before the detector will alarm. A fine mesh insect screen protects the chamber area and is used to avoid potential nuisance alarms. The detector head is



installed into the base with a simple twist-lock action. A locking feature is provided for vandal resistant security.

Table 1 lists the Technical Specifications for Models PSD-7157 and PSD-7157D Photoelectric Smoke Detectors.

CONTROL UNITS

The Models PSD-7157 and PSD-7157D Detectors are designed for operation with control units and releasing devices having specific voltage and current characteristics that are compatible with the detector circuitry. The Detectors are compatible with the Kidde AEGIS control unit. The Kidde AEGIS has three detection circuits which can support up to 26 detectors per circuit.

Table 1: Technical Specification

Model Number	PSD-7157	PSD-7157D
Part Number	71-570000-001	71-570000-002
Detection	Photoelectric	Photoelectric
Approvals	cULus, FM, CSFM, MEA-NYC	cULus, FM, CSFM, MEA-NYC
UL Compatibility I.D.	P55FE1	P55FE1
Listed Spacing	30 ft. (9.1 m) centers or 900 ft. ² (83.6 m ²)	30 ft. (9.1 m) centers or 900 ft. ² (83.6 m ²)
Nominal Sensitivity	3.25% + 0.45% - 1.78% per foot Obscuration	2.40% + 0.04% - 1.34% per foot Obscuration
Standby Voltage (Vdc) Using 2WB: Using 4WRB:	10.2 to 36.8 16.8 to 36.8	10.2 to 36.8 16.8 to 36.8
Maximum Current Standby: Alarm:	70 µA 100 mA	70 µA 100 mA
Response Indicators Quantity: Standby Condition: Thermistor Trouble: Alarm Condition:	2 external LEDs One flash every 11 seconds Double flash every 11 seconds Steady at full brilliance	2 external LEDs One flash every 11 seconds Double flash every 11 seconds Steady at full brilliance
Operating Environment Operating Temperature: Storage Temperature: Relative Humidity:	32° to 120°F (0° to 49°C) -20° to 180°F (-29° to 82°C) 0 to 93% Non-condensing	32° to 120°F (0° to 49°C) -20° to 180°F (-29° to 82°C) 0 to 93% Non-condensing
Air Velocity Open Area: Duct Housing: Altitude:	0 to 300 fpm (0 to 1.5 m/s) N/A Up to 7,500 feet (2,286 m)	0 to 4000 fpm (0 to 20 m/s) 500 to 4000 fpm (2.5 to 20 m/s) Up to 7,500 feet (2,286 m)
Physical Characteristics Material and Finish: Weight:	High-impact, flame-retardant plastic, off white 35.3 oz. (110g) w/o base	High-impact, flame-retardant plastic, off white 35.3 oz. (110g) w/o base
Dimensions Detector Height: Detector Diameter: Base Height: Base Diameter:	1-3/8 in. (35 mm) 3-29/32 in. (99 mm) 3/64 in. (11 mm) 5-29/32 in. (150 mm)	1-3/8 in. (35 mm) 3-29/32 in. (99 mm) 3/64 in. (11 mm) 5-29/32 in. (150 mm)

DETECTOR BASE OPTIONS

The Models PSD-7157 and PSD-7157D can be used with the detector base options and accessories in Tables 2. Various base options are available to provide auxiliary relay and/or remote indication and remote test feature.

The Models PSD-7157 and PSD-7157D Photoelectric Smoke Detectors may be interchanged with other Fenwal Series THD-705X Electronic Heat Detectors and Series CPD-705X Ionization Smoke Detectors when using multifunction base configuration.

SPACING (OPEN AREA LOCATION)

The Models PSD-7157 and PSD-7157D Detectors are listed to be installed on maximum 30 ft. (9.1 m) centers, typically on smooth ceilings up to 15 ft. (4.6 m) high and will operate with minimum air circulation.

Resultant maximum 900 square foot (83.6 m²) spacing may be used as a reasonable guide for comparable applications. Where special conditions exist (ceiling obstructions, high air exchange rates, etc.), reduced spacing must be used to achieve adequate protection. Computer rooms and other such installations may require spacing with a maximum of 200 ft.² (18.6 m²) due to high air exchange rates.

Detectors should not be located in areas with excessive exhaust fumes, kitchen areas, near fireplaces or furnace rooms and within three (3) ft. (.9 m) of air supply ducts or air diffusers.

For additional information, consult the Fenwal Automatic Fire Detection Application Engineering Manual MC-402, NFPA-72 and the local Authority Having Jurisdiction.

WIRING DIAGRAMS

For detailed wiring diagrams with Fenwal 2- and 4-wire bases, please refer Fenwal Document 70.104

INSTALLATION

Detector bases are directly mounted on the electrical junction boxes (3-inch, 3-1/2-inch and 4-inch octagonal, 3-inch round or 4-inch square) (76 mm, 89 mm, 102 mm octagonal, 76 mm round or 102 mm square) without the need for any mechanical adapter required. Refer Fenwal Document 06-235056-001 for additional details.

The detector bases also include a locking feature that prevents removal of the detector without use of a tool.

TESTING AND MAINTENANCE

Testing shall be performed upon installation of the detector and once a year thereafter as stated in NFPA-72 latest edition.

Detector sensitivity shall be checked within one year of installation and every alternative year thereafter as stated in NFPA 72. Refer Fenwal Documents 06-236524-001 and 06-235056-001 for details on using the Infrared Wireless Sensitivity Tester Model DST-003. The tester provides direct readout in percent per foot obscuration from a distance of 15 ft. without removing the detector from its base. A go/no-go test can be performed using a test magnet.

The recommended requirement for detector maintenance consists of an annual cleaning of dust from the detector head by using the suction of a vacuum cleaner. Cleaning programs should be geared to the individual environment in conformance with NFPA 72.



Do not attempt disassembly of the factory sealed smoke detector. This assembly is sealed for your protection and should not be opened for servicing. Opening of the detector will void its warranty.

SPARE PARTS

The Models PSD-7157 and PSD-7157D Detectors are factory repairable only and have no field serviceable spare parts. No field repair should therefore be attempted. For service, return detector head intact to manufacturer.

ARCHITECT/ENGINEER SPECIFICATIONS

The contractor shall furnish and install where indicated on the plans, UL268/UL268A listed Photoelectric Smoke Detectors, Fenwal Models PSD-7157 and PSD-7157D. The combination detector head and twist-lock base shall be UL Listed compatible with a UL Listed fire alarm control unit. The Models PSD-7157 and PSD-7157D Photoelectric Smoke Detectors shall share interchangeable bases with the CPD-7054 and CPD-7054D Ionization Smoke Detectors and the THD-7052 and THD-7053 Heat Detectors.

The Fenwal Models PSD-7157 and PSD-7157D Photoelectric Smoke Detectors shall have two Red LEDs located diametrically opposite each other so as to allow 360-degree viewing. The LEDs shall continuously indicate the operating condition of the Detector. During standby, the LEDs shall flash once every six seconds. During alarm, both LEDs shall light steady at full brilliance. If the sensitivity of the detector drifts outside acceptable limits, the LEDs shall double flash every six seconds. The detector may be reset by actuating the control panel reset switch. The vandal-resistant security locking feature shall be used in those areas as indicated on the drawings. The locking feature shall be field removable when not required.

It shall be possible to measure the sensitivity of the Fenwal Models PSD-7157 and PSD-7157D Photoelectric Smoke Detectors from a distance of up to 15 feet (4.6 m) without removal from the base. Measurement shall be accomplished with a wireless infrared Fenwal Sensitivity Tester (DST-003) allowing direct measurement in percent per foot obscuration. Sensitivity measurement techniques requiring wiring between the Detector-Base combination and the Tester shall not be acceptable. It shall also be possible to perform a functional test of the detector without the need for generating smoke.

The Models PSD-7157 and PSD-7157D Photoelectric Smoke Detectors shall operate over an input voltage range from 10.2 to 36.8 Vdc. Voltage and RF transient suppression techniques to withstand up to 20 volt/meter shall be employed to minimize susceptibility to false alarms.

Supplementary SPDT relays, remote test, and/or remote LED alarm indicators shall be installed where indicated

Table 2: Ordering Information

Part Number	Model	Description
Detector Heads - Ionization Smoke		
70-540000-001	CPD-7054	Ionization <i>Advanced</i> Smoke Detector (cULus)
70-540000-002	CPD-7054D	Ionization <i>Advanced</i> Smoke Detector (cULus)
Detector Heads - Photoelectric Smoke		
71-570000-001	PSD-7157	Photoelectric <i>Advanced</i> Smoke Detector (cULus)
71-570000-002	PSD-7157D	Photoelectric <i>Advanced</i> Smoke Detector (cULus)
Detector Heads - Heat		
70-520000-001	THD-7052	135°F (57°C) Fixed Heat Detector, 15°F (-9°C) Rate of Rise (cULus)
70-530000-001	THD-7053	135°F (57°C) Fixed Heat Detector (cULus)
Detector Bases		
70-501000-001	2-Wire	2-Wire Standard Base. Connects to circuit via screw terminals. (CID = FE51A)
70-501000-002	2WRLT	2-Wire Base w/ Remote LED & Test capabilities. Connects to circuit via screw terminals. Minimum Alarm Current 15 mA @ 24 Vdc. (CID = FE52A)
70-501000-005	2WRB	2-Wire Base w/ 2WRM, Remote LED & Test capabilities. Connects to circuit via pigtail leads. Minimum Alarm Current 19 mA @ 24 Vdc. (CID = FE55A)
70-501000-101	4WRB	4-Wire Base w/ 4WRM, Remote LED & Test capabilities. Connects to circuit via pigtail leads. Minimum Alarm Current 35 mA @ 24 Vdc.
70-500000-004	2WRM	Spare SPDT Relay for 2WRB Bases. Contacts rated 1.0 A, 30 Vdc/0.5 A, 125 Vac.
Detector Accessories		
06-117883-001		Test Magnet
29-116788-001		EOL Supervisory Relay
70-200000-911	RA-911	Remote Alarm Indicator
70-200000-914	RA-914	Remote Alarm Indicator with Smoke Detector Switch
70-500000-003	DST-003	<i>Advanced</i> Handheld Wireless Smoke Detector Sensitivity Tester
70-501000-003	MA-001	Mechanical Retrofit Adapter. Allows CPD-705X and PSD-715X Detectors to physically connect to Base P/Ns 70-201000-001, -002, -003, -005 & DH-22. (CID = MAFE1)

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AEGIS is a trademark of Kidde-Fenwal, Inc.

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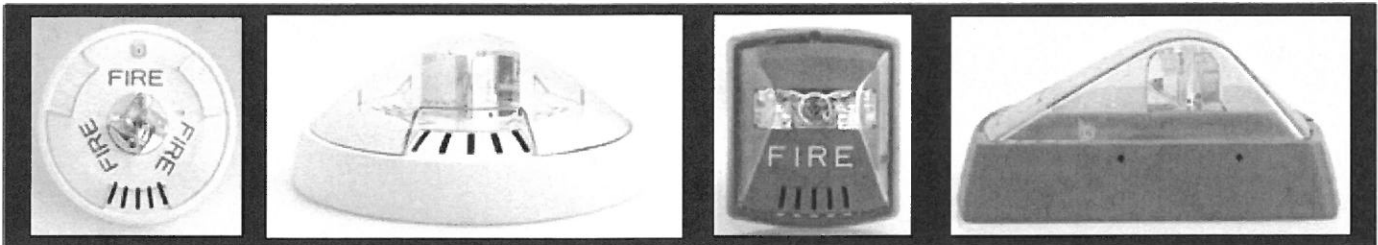
A UTC Fire & Security Company
400 Main Street
Ashland, MA 01721
Ph: 508.881.2000
Fax: 508.881.8920
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Notification Appliances



K-75-020



The Exceder Series notification appliances are compatible with all Kidde suppression control panels and offer modern designs with pleasing aesthetics and low cost of ownership.

The Exceder Series devices incorporate high reliability and high efficiency optics to minimize current draw allowing for a greater number of appliances on the notification appliance circuit. All strobe models feature an industry first of 8 candela settings on a single appliance. Audible models feature 3 sound settings (90, 95, 99 dB). All switches to change settings can be set without the use of a tool and are located behind the appliance to prevent tampering. Wall models feature voltage test points to take readings with a voltage meter for troubleshooting and AHJ inspection.

An additional included benefit is the Universal Mounting Base (UMB). The UMB allows retrofitting for previous generation of Wheelock notification appliances. The UMB can be pre-wired to allow full testing of circuit wiring before the appliance is installed. It comes complete with a Contact Cover for protection against dirt, dust, paint and damage to the contacts. The Contact Cover also acts as a shunting device to allow pre-wire testing for common wiring issues. The Contact Cover is polarized to prevent it from being installed incorrectly and prevents the appliance from being installed while it is on the UMB. When the Contact Cover is removed, the circuit will show an open until the appliance is installed. Wall models provide an optional locking screw for extra secure installation, while the ceiling models provide a captivated screw to prevent the screw from falling during installation.

- Save up to **48%** in current draw*
- Up to **9** models now in **1** appliance
- Save up to **14%** cost of installation**

* Compared to competitive models
** Compared to previous models

- Sleek Modern Aesthetics
- Finger Slide Switches
- Voltage Test Points
- Multiple Voltages
- 3 Audible Settings: 90, 95, 99 dB
- 8 Candela Settings^(Patented)
 - Wall: 15/15_75/30/75/95/110/135/185
 - Ceiling: 15/30/60/75/95/115/150/177
- Universal Mounting Base^(Patented)
 - Ceiling and Wall, Mounts to 5 Backbox Types
- Environmentally Friendly
 - Low Current Draw
- FM Approved
- Meets UL Standard 1971, UL Standard 464, ULC, California State Fire Marshal (CSFM) requirements

Compatibility and Requirements

- Synchronize using the Sync Modules or panels with built-in Patented Sync Protocol
- Compatible with UL "Regulated Voltage" using filtered VDC or unfiltered VRMS input voltage
- Strobes produce 1 flash per second over the "Regulated Voltage" range



PLEASE READ THESE SPECIFICATIONS AND ASSOCIATED INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING THIS PRODUCT. CONTACT KIDDE PROTECTION SYSTEM FOR THE CURRENT INSTALLATION INSTRUCTIONS. FAILURE TO COMPLY WITH ANY OF THESE INSTRUCTIONS, CAUTIONS OR WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE, AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

General Notes:

- Strobes are designed to flash at 1 flash per second minimum over their "Regulated Voltage Range".
- All candela ratings represent minimum effective strobe intensity based on UL Standard 1971.
- Series Exceder Strobe products are Listed under UL Standards 1971 and 464 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%) UL 464 (85% UL 1971).
- Series Exceder horns are under UL Standard 464 for audible signal appliances (Indoor use only).

Strobe Rating per UL Standard 1971

		UL Max Current*													
		24 VDC / 24 FWR												12 VDC	
Model	Regulated Voltage Range VDC	15	15/75	30	60	75	95	110	115	135	150	177	185	15	15/75
ST	8.0-33.0	0.057	0.070	0.085		0.135	0.163	0.182		0.205			0.253	0.110	0.140
STC	8.0-33.0	0.061		0.085	0.103	0.135	0.163		0.182		0.205	0.253		0.110	

Horn Strobe Rating per UL 1971 & UL 464 at 24 VDC

		UL Max Current* at 99 dBA													
		24 VDC												12 VDC	
Model	Regulated Voltage Range VDC	15	15/75	30	60	75	95	110	115	135	150	177	185	15	15/75
HS	8.0-33.0	0.082	0.095	0.102		0.148	0.176	0.197		0.242			0.282	0.125	0.159
HSC	8.0-33.0	0.082		0.102	0.141	0.148	0.176		0.197		0.242	0.282		0.125	

		UL Max Current* at 95 dBA													
		24 VDC												12 VDC	
Model	Regulated Voltage Range VDC	15	15/75	30	60	75	95	110	115	135	150	177	185	15	15/75
HS	8.0-33.0	0.073	0.083	0.087		0.139	0.163	0.186		0.230			0.272	0.122	0.153
HSC	8.0-33.0	0.073		0.087	0.128	0.139	0.163		0.186		0.230	0.272		0.122	

		UL Max Current* at 90 dBA													
		24 VDC												12 VDC	
Model	Regulated Voltage Range VDC	15	15/75	30	60	75	95	110	115	135	150	177	185	15	15/75
HS	8.0-33.0	0.065	0.075	0.084		0.136	0.157	0.184		0.226			0.267	0.120	0.148
HSC	8.0-33.0	0.065		0.084	0.120	0.136	0.157		0.184		0.226	0.267		0.120	

Horn Ratings per UL 464

Model	Regulated Voltage Range YDC	99 dB	95 dB	90 dB
HN	16-33.0	0.064	0.044	0.022
HNC	16-33.0	0.084	0.044	0.022
HN	8.0-17.5	0.047	0.026	0.017
HNC	8.0-17.5	0.047	0.026	0.017

* UL max current rating is the maximum RMS current within the listed voltage range (16-33 VDC for 24 VDC units). For strobes, the UL max current is usually at the minimum listed voltage (16 VDC for 24 VDC units). For audibles, the max current is usually at the maximum listed voltage (33 VDC for 24 VDC units). For unfiltered ratings, see installation instructions.

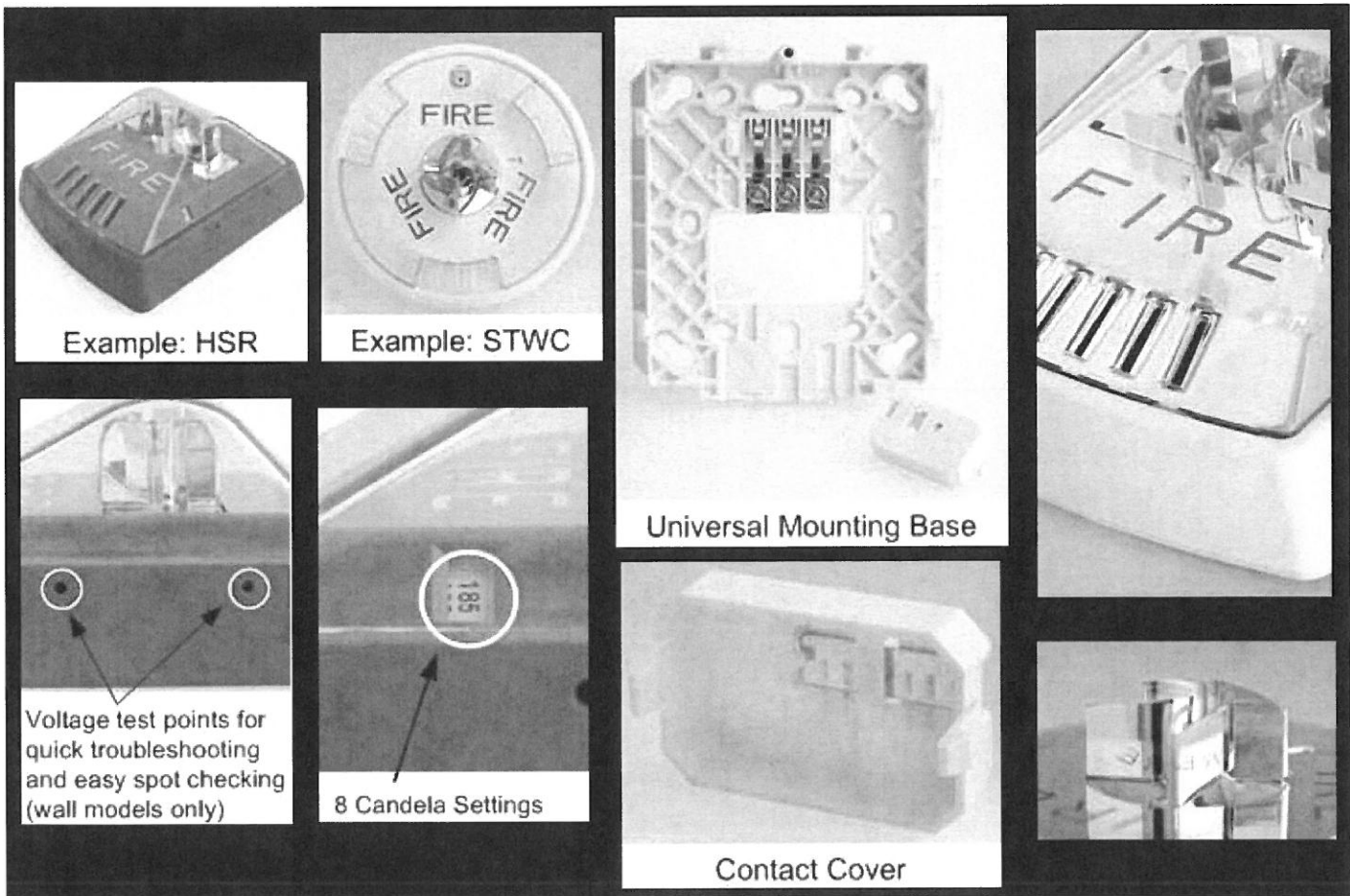
Specifications and Ordering Information

All Exceder Series of notification appliances meet the following requirements:

- Can be powered by 12 or 24 VDC
- Can synchronize with SM, DSM, or SD-6 and PS-8 power supplies
- Uses the Universal Mounting Base
- In the case of any model including a strobe, can be set to the following candela: 15, 15-75, 30, 75, 95, 110, 135, 185

The model numbers and descriptions are as follows:

Model	Description	Model	Description
HSR	Horn, Strobe, Red	HSR-A	Horn, Strobe, Red, Agent Label
HSW	Horn, Strobe, White	HSW-A	Horn, Strobe, White, Agent Label
HSRC	Horn, Strobe, Red, Ceiling Mount	STR-A	Strobe, Red, Agent Label
HSWC	Horn, Strobe, White, Ceiling Mount	STW-A	Strobe, White, Agent Label
STR	Strobe, Red	HNR-A	Horn, Red, Agent Label
STW	Strobe, White	HNW-A	Horn, White, Agent Label
STRC	Strobe, Red, Ceiling Mount	MODEL LEGEND: HN = Horn ST = Strobe HS = Horn Strobe R = Red W = White C = Ceiling Mount A = Agent Label	Example: STWC = Strobe, White, Ceiling Mount HSR = Horn Strobe, Red, Wall Mount
STWC	Strobe, White, Ceiling Mount		
HNR	Horn, Red		
HNW	Horn, White		
HNRC	Horn, Red, Ceiling Mount		
HNWC	Horn, White, Ceiling Mount		



Architects and Engineers Specifications

The notification appliances shall be Exceder Series HS Audible Strobe appliances, Series ST Visual Strobe appliances and Series HN Audible appliances or approved equals. The Series HS and ST Strobes shall be listed for UL Standard 1971 (Emergency Devices for the Hearing-Impaired) for Indoor Fire Protection Service. The Series HS and HN Audibles shall be UL Listed under Standard 464 (Fire Protective Signaling). All Series shall meet the requirements of FCC Part 15 Class B. All inputs shall be compatible with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP) with the ability to operate from 8 to 33 VDC. Indoor wall models shall incorporate voltage test points for easy voltage inspection.

The Series HS Audible Strobe and ST Strobe appliances shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall incorporate a Xenon flashtube enclosed in a rugged Lexan® lens. The Series shall be of low current design. Where Multi-Candela appliances are specified, the strobe intensity shall have 8 field selectable settings at 15, 15/75, 30, 75, 95, 110, 135, 185 candela for wall mount and 15, 30, 60, 75, 95, 115, 150, 177 candela for ceiling mount. The selector switch for selecting the candela shall be tamper resistant. The 15/75 candela strobe shall be specified when 15 candela UL Standard 1971 Listing with 75 candela on-axis is required (e.g. ADA compliance). Appliances with candela settings shall show the candela selection in a visible location at all times when installed.

The audible shall have a minimum of three (3) field selectable settings for dBA levels and shall have a choice of continuous or temporal (Code 3) audible outputs.

The Series HS Audible Strobe, ST Strobe and Series HN Audible shall incorporate a patented Universal Mounting Base that shall allow mounting to a single-gang, double-gang, 4-inch square, 3.5-inch octal, 4-inch octal or 100mm European type back boxes. Two wire appliance wiring shall be capable of directly connecting to the mounting base. Continuity checking of the entire NAC circuit prior to attaching any notification appliances shall be allowed. Product shall come with Contact Cover to protect contact springs. Removal of an appliance shall result in a supervision fault condition by the Fire Alarm Control Panel (FACP). The mounting base shall be the same base among all horn, strobe, horn strobe, wall and ceiling models. All notification appliances shall be backwards compatible.

The Series HS and ST wall models shall have a low profile measuring 5.24" H x 4.58" W x 2.19" D. Series HN wall shall measure 5.24" H x 4.58" W x 1.6" D. The Series HSC and STC shall be round and have a low profile with a diameter of 6.68" x 2.63" D. Series HNC ceiling shall have a diameter of 6.68" x 1.50" D.

Synchronization is achieved through Kidde control panel synchronization protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync protocol fails to operate, the strobe shall revert to a non-synchronized flash-rate and still maintain (1) flash per second over its Regulated Voltage Range. The appliance shall also be designed so that the audible signal may be silenced while maintaining strobe activation when used with synchronization protocol.

Wall Appliances – UL Standard 1971, UL Standard 464, California State Fire Marshal (CSFM), ULC

Ceiling Appliances – UL Standard 1971, UL Standard 464, California State Fire Marshal (CSFM), ULC

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Key Maintenance Switch

FEATURES

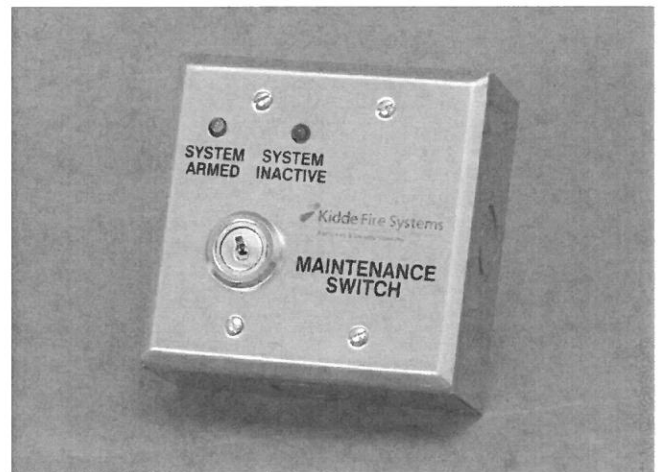
- cFMus Approved to ANSI/UL 864, 9th edition, CANADA/ULC-S527 and ANSI/NFPA 72
- Stainless Steel Plate
- Status LED Indicators
- Surface or Flush Mount Installations
- Safely Disconnects Actuation Circuits by Shorting Metron Actuators
- Key Operated (Nonremovable When Operated)
- Four-Pole Double-Throw Switch
- Meets the Requirements of NFPA72 (2007 edition)

DESCRIPTION

This Key Maintenance Switch is a key-switch that disconnects actuation circuits in the system to prevent accidental discharge of fire suppression systems during maintenance operations.

The Key Maintenance Switch provides a means to short the Metron Actuator circuit leads for safe disconnection of conventional and addressable control units. Refer to the installation wiring diagram for detailed wiring connections.

- Two LEDs indicate "SYSTEM ARMED" or "SYSTEM INACTIVE" when the key is inserted and turned. The key can only be removed in the armed position.
- Key Maintenance Switch mounts to a 4-inch backbox and operates on 24 Vdc.
- Designed for mounting on the wall with a back box.
- Key Maintenance Switch can be installed in either surface mount or flush mount configurations.
- Key Maintenance Switch physically disconnects the release circuit wiring in addition to the trouble open signal, the switch provides a means to generate a supervisory condition.



ORDERING INFORMATION

Part Number	Description
76-600000-200	Key Maintenance Switch
06-236881-001	Backbox

ELECTRICAL

Switch:	4PDT Key Switch - one set of contacts control indicators on the faceplate. - Three remaining contacts are available for application wiring.
Device Current:	10 A @ 250 Vac 15 A @ 125 Vac 15 A @ up to 30 Vdc
Electrical Life:	50,000 cycles - maintained 25,000 cycles - momentary

ENVIRONMENTAL

Operating Temperature Range: 32 to 120°F (0 to 49°C)

MECHANICAL

Mechanical Life:	100,000 cycles
Switch Plate Construction:	Stainless Steel

This literature is provided for informational purposes only. KIDDE-FENWAL, INC. assumes no responsibility for the product's suitability for a particular application. The product must be properly applied to work correctly. If you need more information on this product, or if you have a particular problem or question, contact KIDDE-FENWAL, INC., Ashland, MA 01721. Telephone: (508) 881-2000.

Kidde Fire Systems
A UTC Fire & Security Company
400 Main Street
Ashland, MA 01721
Ph: 508.881.2000
Fax: 508.881.8920
www.kiddefiresystems.com

Series MBA Motorized Bells by Kidde

FEATURES

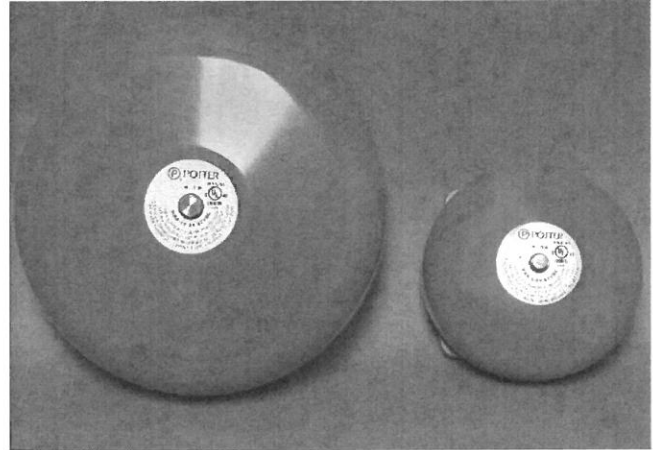
- Agency approvals include: UL, ULC, CSFM, NYMEA
- 6-inch and 10-inch shell sizes, 24 Vdc models
- Mounting options for surface, semi-flush, outdoor, and concealed conduit installation
- Red smooth finish to improve appearance and durability

DESCRIPTION

Potter[®] manufactured Motor Bells provide a superior engineered notification product for fire and life safety alarm systems. The motorized bells are designed for public mode signaling in accordance with the latest edition of NFPA 72. The bells produce a long and continuous higher dBA ringing sound at low current draw; low frequency shells for better audibility, low RFI noise and high torque. A permanent magnet motor is incorporated for durable, reliable performance.

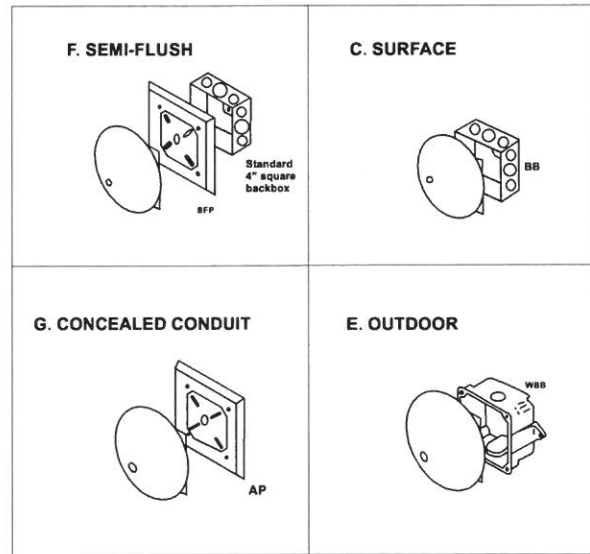
MOUNTING

The unit mounts on a standard 4-in. (101 mm) square electrical backbox for indoor applications. Other mounting options are provided in the Mounting Options table below.



Series MBA Motorized Bells

Model Number	Part Number	Mounting Options
SFP-R	75-000000-005	F
BB-R	75-000000-006	C
AP-R	75-000000-007	G
WBB-R	75-000000-008	E



ORDERING INFORMATION

Part Number	Input Voltage	Shell Size	Max. RMS Operating Current (mArms)				Min. Sound Output (dBA at 10 ft. per UL464)	Min. Sound Output (dBA at 10 ft. per ULC-S525)
			Regulated 12 Vdc (per UL464)	Regulated 12 VFWR (per UL464)	Regulated 12 Vdc (per ULC-S525)	Regulated 12 VFWR (per ULC-S525)		
MBA-6-24	24 Vdc	6 in. (150 mm)	13.5	24.5	17.0	30.0	75.6 at 8Vdc	95.0 at 8Vdc
MBA-10-24	24 Vdc	10 in. (250 mm)	34.0	46.0	34.0	46.0	79.1 at 8Vdc	92.0 at 8Vdc

Notes:

1. Minimum dB ratings are calculated from integrated sound pressure measurements made at Underwriters Laboratories as specified in UL Standard 464 and ULC-S525. Due to changes in UL Standard 464 and ULC-S525, all minimum dBA ratings are calculated at minimum operating voltage. Typical operating dBA will be higher. UL temperature range is -40 to 150°F (-40 to 66°C).
2. Typical dB ratings are calculated from measurements made with a conventional sound level meter and are indicative of output levels in an actual installation.

Kidde is a registered trademark of Kidde-Fenwal Inc.
Potter is a registered trademark of Potter Electric Signal Company, LLC

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FM-200[®] Component Description

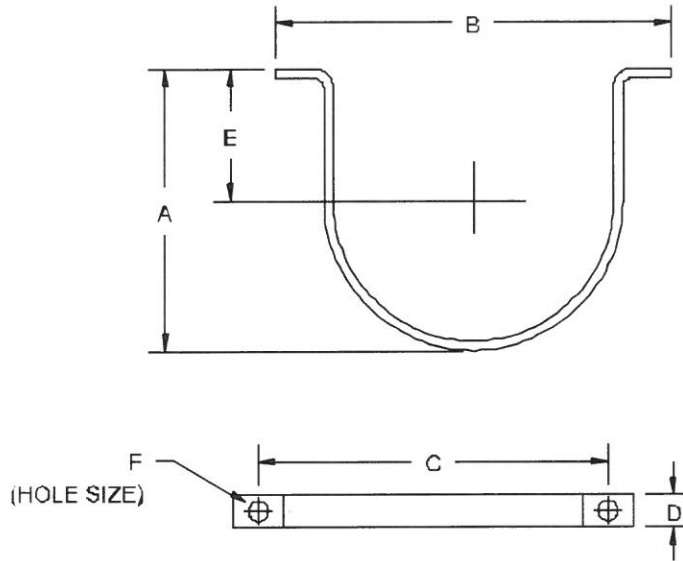
Cylinder Mounting Straps



Effective: April 2007
K-90-8130

FEATURES

- For Use with UL Listed, ULC Listed and FM Approved Systems



PART NO.	CYL. SIZE	CYL. O.D.		A		B		C		D		E		F	
		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
283945	10, 20	7.07	1.80	6.48	165	9.62	244	8.62	219	1.00	25	2.78	71	.437	11.1
283934	40, 70	9.00	229	8.16	207	11.69	297	10.69	272	1.00	25	3.50	89	.437	11.1
292971	200 pre-3/98	13.60	345	13.09	332	17.06	433	15.44	392	1.75	44	6.06	154	.625	15.9
235317	125, 200	12.75	324	12.93	329	16.18	411	14.56	370	1.75	44	5.59	142	.625	15.9
281866	350	16.00	406	15.5	394	19.5	495	17.88	454	1.75	44	6.06	154	.625	15.9
294651	600	22.00	559	21.56	548	25.75	654	24.12	613	1.75	44	10.25	260	.625	15.9
236125	900	24.00	610	23.75	603	27.75	705	26.00	660	1.75	44	12.13	308	.625	15.9

MATERIALS

- Steel, Painted Black SAE 1020

FM-200 is a registered trademark of the Great Lakes Chemical Corporation.

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Kidde Fire Systems - Flow Calculation Software v4.0.0 (Novec 1230)
UL: EX4674 / Component of FM Approved System

SPACE COAST FIRE & SAFETY

420 MANOR DR
File Name: ST. Pete Airport Final.FC4

Consolidated Report

Customer Information

Company Name: THE ARTEC GROUP, INC
Address: 376 Interstate Court
Sarasota, FL

Phone: 941.960.1378

Contact: Brian Weber

Title: Construction Manager

Project Data

Project Name: St. Petersburg–Clearwater International Airport
Designer: Jason Adams
Number: 321-403-3555
Account:
Location: Merritt Island FL
Description: 14700 Terminal blvd, St.Petersburg,FL

Enclosure Report

Elevation: 0 ft (relative to sea level)

Atmospheric Correction Factor: 1

Enclosure 1 Room 114 Data/ I.T.

Enclosure Temperature: Number of Nozzles: 1

Calculation Date/Time: Tuesday, January 17, 2017, 1:35:47 PM
Copyright (c) JENSEN HUGHES, Inc. Licensed to: Kidde-Fenwal
Key ID: 1772491494

Consolidated Report

Minimum: 70 F	Width: 0.0 ft
Maximum: 70 F	Length: 0.0 ft
Max. Concentration: 4.51 %	Height: 0.0 ft
Design Concentration:	Volume: 2081.0 ft ³
Adjusted: 4.51 %	Non-permeable: 0.0 ft ³
Minimum: 4.50 %	Total Volume: 2081.0 ft ³
Min. Agent Required: 84.8 lb	
Adjusted Agent Required: 85.0 lb	

Agent Source Report

Agent: Novec / Propellant N2
(Novec 1230 is a Trademark of 3M)
Cylinder Name: 125 lb Cylinder w/LLI
Cylinder Part Number: 45-100121-001
Agent Per Cylinder: 85.0 lb
Fill Density: 47.5 lbs / cubic ft
Number of Main Cylinders: 1
Number of Reserve Cylinders: 0

Cylinder Empty Weight: 98.0 lb
Weight, All Cylinders + Agent: 183.0 lb
Floor Area Per Cylinder: 0.89 ft²
Floor Loading Per Cylinder: 206 lbs / ft²

System Acceptance Report

Calculation Date/Time: Tuesday, January 17, 2017, 1:35:47 PM
Copyright (c) JENSEN HUGHES, Inc. Licensed to: Kidde-Fenwal
Key ID: 1772491494

Consolidated Report

*** WARNING - The data in this project may have been changed after the calculations were performed.**

System Discharge Time: 9.4 seconds
 Percent Agent In Pipe: 9.1%
 Percent Agent Before First Tee: 0.0%
 Dead Volume: 0.0% (0.0 lb)

Enclosure Number: 1
 Enclosure Name: Room 114 Data/ I.T.
 Minimum Design Concentration: 4.50%
 Adjusted Design Concentration: 4.51%
 Predicted Concentration: 4.51%
 Maximum Expected Agent Concentration: 4.51% (At 70 F)

Nozzle	Minimum Agent Required	Adjusted Agent Required	Predicted Agent Delivered	Average Nozzle Pressure
E1-N1	84.8 lb	85.0 lb	85.0 lb	106 psig

Consolidated Report

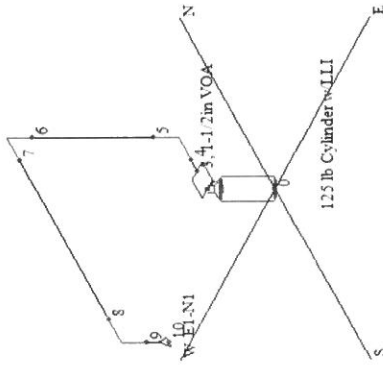
Pipe Network Report

Description	Pipe Section	Start Node	End Node	Pipe Type	Pipe Diameter	Pipe Length	Union	Elevation Change	Total Equivalent Length	Nozzle Name	Nozzle Size	Nozzle Type	Nozzle Area
Cylinder - On	Man./End	0	2		1-1/2 in	2.67 ft	0	2.67 ft	50.00 ft				
Adapter	System	2	3		1-1/2 in	0.22 ft	0	-----	11.80 ft				
Pipe	System	3	4	40T	3/4 in	0.50 ft	0	-----	0.50 ft				
Elbow (90)	System	4	5	40T	3/4 in	-----	0	-----	2.20 ft				
Pipe	System	5	6	40T	3/4 in	4.80 ft	0	4.80 ft	4.80 ft				
Elbow (90)	System	6	7	40T	3/4 in	-----	0	-----	2.20 ft				
Pipe	System	7	8	40T	3/4 in	7.00 ft	0	-----	7.00 ft				
Elbow (90)	System	8	9	40T	3/4 in	-----	0	-----	2.20 ft				
Pipe&Nozzle	System	9	10	40T	3/4 in	0.50 ft	0	-0.50 ft	0.50 ft	E1-N1	3/4 in	360-SS	0.3453 in ²

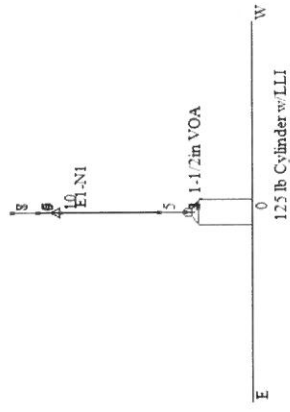
Pipe Network Report (Combined Pipe and Elbows)

Description	Pipe Section	Start Node	End Node	Pipe Type	Pipe Diameter	Pipe Length	Union	Elevation Change	Total Equivalent Length	Nozzle Name	Nozzle Size	Nozzle Type	Nozzle Area
Cylinder - On	Man./End	0	2		1-1/2 in	2.67 ft	0	2.67 ft	50.00 ft				
Adapter	System	2	3		1-1/2 in	0.22 ft	0	-----	11.80 ft				
Pipe	System	3	4	40T	3/4 in	0.50 ft	0	-----	0.50 ft				
Elbow/Pipe	System	4	6	40T	3/4 in	4.80 ft	0	4.80 ft	7.00 ft				
Elbow/Pipe	System	6	8	40T	3/4 in	7.00 ft	0	-----	9.20 ft				
Elbow (90)	System	8	9	40T	3/4 in	-----	0	-----	2.20 ft				
Pipe&Nozzle	System	9	10	40T	3/4 in	0.50 ft	0	-0.50 ft	0.50 ft	E1-N1	3/4 in	360-SS	0.3453 in ²

View #: 1 - Isometric View Node



View #: 5 - Standard Elevation View



View #: 9 - Standard Plan View

